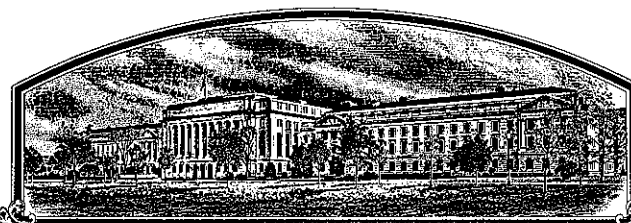


No.

9300206



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

*Asgrow Seed Company*

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE FOREGOING PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'A1900'

*In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twenty-ninth day of September in the year of our Lord one thousand nine hundred and ninety-five.*

Attest:

*Marsha A. Stambaugh*

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*Samuel J. Hittman*  
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

**APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE**  
(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) ASGROW SEED COMPANY		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. XP2190	3. VARIETY NAME A1900
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) 9646-190-20 7000 Portage Road Kalamazoo, MI 49001		5. PHONE (include area code) 616-384-2351	<b>FOR OFFICIAL USE ONLY</b> PVPO NUMBER 9300206 F I L I N G Date May 5, 1993 Time 2:45 <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M. F E E S Filing and Examination Fee. \$ 2325.00 Date April 12, 1993 R E C E I V E D Certificate Fee \$ 300.00 Date Aug. 15, 1995
6. GENUS AND SPECIES NAME Glycine max	7. FAMILY NAME (Botanical) Leguminosae		
8. CROP KIND NAME (Common Name) Soybean	9. DATE OF DETERMINATION 1988		
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		12. DATE OF INCORPORATION MARCH 22, 1968	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Mr Wayne Hoener 616 384 2351 Dr Alan Walker 608 755-1777 9646-190-20 ASGROW SEED CO ASGROW SEED CO Gull Rd Bldg 190 5926 Hwy 14 E Kalamazoo, MI 49001 Janesville, WI 53546 PHONE (include area code)			

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

a. ☒ Exhibit A, Origin and Breeding History of the Variety

b. ☒ Exhibit B, Novelty Statement

c. ☒ Exhibit C, Objective Description of Variety

d. ☒ Exhibit D, Additional Description of Variety

e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership

f. ☒ Seed Sample (2,500 viable untreated seeds) Date Seed Sample mailed to Plant Variety Protection Office \_\_\_\_\_

g. ☒ Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States"

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.)

☐ YES (If "YES" answer items 16 and 17 below) ☒ NO (If "NO," skip to item 18 below)

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?

☐ YES ☒ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?

☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?

☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act Give date \_\_\_\_\_)

☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?

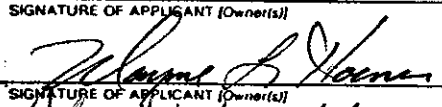
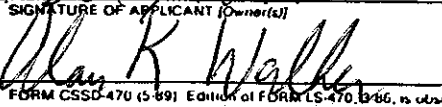
☐ YES (If "YES," give names of countries and dates)

☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT (Owner(s)) 	CAPACITY OR TITLE Soybean Product Mgr	DATE 3/31/93
SIGNATURE OF APPLICANT (Owner(s)) 	CAPACITY OR TITLE Director of Soybean Research	DATE 3-26-93

ASGROW SEED COMPANY  
PVP APPLICATION A1900 SOYBEAN  
April, 1993

EXHIBIT A  
ORIGIN AND BREEDING HISTORY OF A1900

- 1986 Cross was made in Redwood Falls, MN in 1986  
Parentage: 86P058-14\*A2234  
86P058-14 = Ozzie\*Dassel (F5)
- 1986-87 F1 and F2 generation grown near Isabela, Puerto Rico.  
(Winter)
- 1987 F3 generation grown at Redwood Falls, MN. Two hundred plants selected from a bulk population and threshed individually.
- 1988 Progeny Row A861892 A88-12740 was selected for its uniformity in plant height and standability. This row was harvested in bulk and seeds were checked and verified for uniform seed coat luster and hilum color.
- 1988 (Oct) A861892 A88-12740 was determined to be a unique and stable line.
- 1989 A861892 A88-12740 was entered in a preliminary (P165-31) yield test, conducted at a total of 4 locations in Minnesota, Wisconsin and Michigan.
- Fall 1989 100 F5 plants were selected and threshed individually. 54 F5 plants were then sent to Puerto Rico for seed increase.
- 1990 A861892 A88-12740 was entered into the advanced V150 yield test conducted at 15 locations in 5 states.  
A 40-entry subline yield test was conducted at 2 locations in 2 states. The top subline was then bulked for the main seed source.
- Fall 1990 5 Lb of Breeders Seed was sent to Puerto Rico for seed increase.
- 1991 A861892 A88-12740 was entered into the advanced V150 test as experimental stage 2 XR2190, conducted at 15 locations.  
Basic seed of XR2190 was produced near Perry, Iowa.
- 1992 XP2190 was entered into the advanced test V100 and V150 yield test conducted at 7 loc and 16 loc respectively.  
Foundation seed of XP2190 was produced near Clarion, Iowa.  
XP2190 was nominated for release and assigned the designation A1900. A1900 is uniform and stable within commercially acceptable limits based on trial observations since October 1988. As with other soybean varieties, variants can occur for almost any characteristic during the course of repeated sexual reproduction.

ASGROW SEED COMPANY  
PVP APPLICATION A1900 SOYBEAN  
April, 1993

EXHIBIT B  
NOVELTY STATEMENT CONCERNING A1900 SOYBEAN

To our knowledge the soybean varieties that closely resemble A1900 are A2234, A1662, Kenwood. Characteristics which differentiate A1900 include:

- |                                      |  |
|--------------------------------------|--|
| 1) Pod Wall Color                    | A1900=Brown<br>A1662=Brown<br>A2234=Tan<br>Kenwood=Brown   |
| 2) Seed Protein Electrophoretic Band | A1900=Type A<br>A1662=Type B<br>A2234=Type A<br>Kenwood= — |

3) Reaction to Races of Phytophthora mega sperma f. sp. glycinea

	Races																	
	1	2	3	4	5	7	8	9	10	11	12	13	16	17	19	20	24	25
A1900	R	R	R	R	R	R	R	R	R	R	R	R	S	R	R	R	R	S
A1662	R	R	R	R	R	R	R	R	R	R	S	R	S	R	S	S	R	S
A2234	R	R	R	R	R	R	R	R	R	R	S	R	S	R	S	S	R	S
KENWOOD	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S

U.S. DEPARTMENT OF AGRICULTURE  
 AGRICULTURAL MARKETING SERVICE  
 LIVESTOCK, MEAT, GRAIN & SEED DIVISION  
 PLANT VARIETY PROTECTION OFFICE  
 BELTSVILLE, MARYLAND 20705

EXHIBIT C  
 (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY  
 SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) ASGROW SEED COMPANY	TEMPORARY DESIGNATION XP2190	VARIETY NAME A1900
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 9638-190-23 Gull Road, Building 190 Kalamazoo, MI 49001		FOR OFFICIAL USE ONLY PVPO NUMBER 9300206

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,  ). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

## 1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)  
 3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)  
 4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

## ★ 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow      2 = Green      3 = Brown      4 = Black      5 = Other (Specify) \_\_\_\_\_

## 3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')      2 = Shiny ('Nebsoy'; 'Gasoy 17')

## ★ 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

## ★ 5. HILUM COLOR: (Mature Seed)

1 = Buff      2 = Yellow      3 = Brown      4 = Gray      5 = Imperfect Black      6 = Black      7 = Other (Specify) \_\_\_\_\_

## ★ 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow      2 = Green

## ★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low      2 = High

## ★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP<sup>1a</sup>)      2 = Type B (SP<sup>1b</sup>)

## ★ 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')      2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')  
 3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')  
 4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

## ★ 10. LEAFLET SHAPE:

1 = Lanceolate      2 = Oval      3 = Ovate      4 = Other (Specify) \_\_\_\_\_

4

## 11. LEAFLET SIZE:

☐ 21 = Small ('Amsoy 71'; 'A5312')  
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

## 12. LEAF COLOR:

☐ 21 = Light Green ('Weber'; 'York')  
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

## ★ 13. FLOWER COLOR:

☐ 2

1 = White

2 = Purple

3 = White with purple throat

## ★ 14. POD COLOR:

☐ 2

1 = Tan

2 = Brown

3 = Black

## ★ 15. PLANT PUBESCENCE COLOR:

☐ 2

1 = Gray

2 = Brown (Tawny)

## 16. PLANT TYPES:

☐ 21 = Slender ('Essex'; 'Amsoy 71')  
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

## ★ 17. PLANT HABIT:

☐ 31 = Determinate ('Gnome'; 'Braxton')  
3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

2 = Semi-Determinate ('Will')

## ★ 18. MATURITY GROUP:

☐ 0 ☐ 4

1 = 000

2 = 00

3 = 0

4 = I

5 = II

6 = III

7 = IV

8 = V

9 = VI

10 = VII

11 = VIII

12 = IX

13 = X

## ★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

## BACTERIAL DISEASES:

★

☐ 0Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★

☐ 0Bacterial Blight (*Pseudomonas glycinea*)

★

☐ 0Wildfire (*Pseudomonas tabaci*)

## FUNGAL DISEASES:

★

☐ 0Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojina*)

★

☐ 0

Race 1

☐

Race 2

☐

Race 3

☐

Race 4

☐

Race 5

☐

Other (Specify)

☐ 0Target Spot (*Corynespora cassiicola*)☐ 1Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☐ 2Powdery Mildew (*Microsphaera diffusa*)

★

☐ 1Brown Stem Rot (*Cephalosporium gregatum*)☐ 0Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

## 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

## FUNGAL DISEASES: (Continued)

- ★ ☐ 0 Pod and Stem Blight (*Diaporthe phaseolorum* var; *sojae*)
- ☐ 0 Purple Seed Stain (*Cercospora kikuchii*)
- ☐ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☐ 2 Race 1 ☐ 2 Race 2 ☐ 2 Race 3 ☐ 2 Race 4 ☐ 2 Race 5 ☐ 0 Race 6 ☐ 2 Race 7
- ☐ 2 Race 8 ☐ 2 Race 9 ☐ 2 Other (Specify) Resistant to Race 10, 11, 12, 13, 14, 17, 19, 20, & 24

## VIRAL DISEASES:

- ☐ 0 Bud Blight (Tobacco Ringspot Virus)
- ☐ 0 Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☐ 0 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ 0 Pod Mottle (Bean Pod Mottle Virus)
- ★ ☐ 0 Seed Mottle (Soybean Mosaic Virus)

## NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☐ 0 Race 1 ☐ 0 Race 2 ☐ 1 Race 3 ☐ 1 Race 4 ☐ 0 Other (Specify) \_\_\_\_\_
- ☐ 0 Lance Nematode (*Hoplolaimus Colombus*)
- ★ ☐ 0 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☐ 0 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ 0 OTHER DISEASE NOT ON FORM (Specify): \_\_\_\_\_

## 20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☐ 1 Iron Chlorosis on Calcareous Soil
- ☐ Other (Specify) \_\_\_\_\_

## 21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ 0 Potato Leaf Hopper (*Empoasca fabae*)
- ☐ Other (Specify) \_\_\_\_\_

## 22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	A2234	Seed Coat Luster	A2234
Leaf Shape	A2234	Seed Size	A2234
Leaf Color	A2234	Seed Shape	A2234
Leaf Size	A2234	Seedling Pigmentation	A2234

## 23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
A1900 Submitted	126	1.8	80	8.7	13.8	40.3	21.5	17	2.7
A2234 Name of Similar Variety	129	1.6	81	8.9	13.8	41.2	21.5	18	2.6

## PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A<sub>2</sub> in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol., 1: 1-19.



ASGROW SEED COMPANY  
PVP APPLICATION A1900 SOYBEAN  
April, 1993

EXHIBIT D  
ADDITIONAL DESCRIPTION OF VARIETY

A1900 is a late group I cultivar that possesses an outstanding combination of characteristics needed by producers in its maturity zone. It combines high yield potential, excellent standability, resistance to powdery mildew and resistance to many races of Phytophthora megasperma f. sp. glycinea conferred by the Rps<sub>1</sub><sup>k</sup> and Rps<sub>7</sub> alleles.

8

ASGROW SEED COMPANY  
PVP APPLICATION A1900 SOYBEAN  
April, 1993

EXHIBIT E  
STATEMENT OF BASIS OF APPLICANT OWNERSHIP

A1900 was originated and developed by Roger L Lussenden, an Asgrow plant breeder. By agreement between Asgrow Seed Company, all rights to any invention, discovery or development made by employees are assigned to the company. No rights of such invention, discovery or development are returned by the employee.